LB
412
6A5
1911
Copy 2

MANUAL OF INSTRUCTIONS for School Authorities and School Physicians.

****

Class LB 3412
Book I6A5
1911
copy 2

MANUAL OF INSTRUCTIONS

FOR

School Authorities and School Physicians

Issued jointly by the Indiana State Board of Education and the Indiana State Board of Health, as provided in Section 5 of the Medical School Inspection Law, approved March 6, 1911

CHAS. A. GREATHOUSE,
President State Board of Education
[SEAL]

J. N. HURTY,
Secretary State Board of Health
[SEAL]

33282

MANUAL OF INSTRUCTIONS

FOR

SCHOOL AUTHORITIES AND SCHOOL PHYSICIANS

Issued jointly by the Indiana State Board of Education and the Indiana State Board of Health, as provided in Section 5 of the Medical School Inspection Law, approved March 6, 1911

CHAS. A. GREATHOUSE,
President State Board of Education
[SEAL]

J. N. HURTY,
Secretary State Board of Health
[SEAL]

INDIANAPOLIS:
WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING
1911

TABLE OF CONTENTS

	Page
Medical School Inspection Law	19
Sanitary Schoolhouse Law	6
Rules for Quarantine and Exclusion from School	11
Directions for Disinfection	15
Rules for the Medical Inspector	21
Rules for the Teacher	22
Blank Forms	25–31
Teaching of Hygiene	31
Comments on Sanitary Schoolhouse Law	32

APR 10 1912

INTRODUCTION.

The most valuable asset that any child can possess is good health. The health of the child very largely determines the success of the adult, and what we should be most concerned about in education is the laying up of vital assets for use in the active battle of life. One of the most commonplace of our proverbs tells us that: "Prevention is better than cure," yet it has heretofore been with the greatest difficulty that the public could be convinced that the prevention of defects in school children is better than their cure.

The State of Indiana has taken a forward step in providing by law for the erection of sanitary schoolhouses and for medical inspection of school children, and it will not be long until every school which makes any claim to progressiveness is provided with intelligent supervision of the health conditions of its pupils.

This manual is intended to cover in a brief way all the essentials necessary in the beginning of medical school inspection. No comprehensive plan can be outlined that will meet the needs of every school community. Medical inspection must be established in the different school communities of the State and worked out along lines that will meet the local conditions. So far as possible, it is the aim of this manual to have the fundamental principles of school inspection carried out uniformly throughout the State. Hence the rules herein set forth have been made as simple and plain as possible. The institution of medical inspection by the Act of 1911 must be regarded not only as an attempt to safeguard the lives and health of the pupils in our public schools, but is also a foreshadowing of better things to come. The legislature has done its part and has prepared the way. It now rests with school and health officials to realize their responsibilies, to arouse public sentiment from its present state of apathy and by fulfilling the spirit as well as the letter of the law to develop the scheme of medical inspection into an efficient system of prevention.

Administrative expenditure of this kind is the soundest economy. No higher work can be conceived than that of conserving

and safeguarding the health and lives of the children in the public schools of Indiana. As has been well said by David Starr Jordan:

"There is nothing in all the world so important as little children, nothing so interesting. If ever you wish to go in for philanthropy, if ever you wish to be of any real use in the world, do something for children. We can dress the sore, bandage the wounded, imprison the criminal, heal the sick and bury the dead, but there is always the chance that we can save the child. If the great army of philanthropists ever exterminate sin and pestilence, ever work out our race's salvation, it will be because a little child has led them."

THE SCHOOLS AND HEALTH.

That health is an asset is now realized by every one. It is a crime for anyone to suffer from a curable or preventable disease. Since the strength of a State depends upon the strength and character of its citizens, it becomes the duty of the State for its own protection to safeguard the health of its own people. It would seem that in no other place can this duty of the State be more fully met than in protecting and safeguarding the health of its future citizens in the public schools. It would seem also that a compulsory education law ought to be preceded by a law providing for the health and care of young people. Since such a law was not enacted before the compulsory education law, the legislature of 1911 very wisely enacted the Sanitary Schoolhouse Law, which follows. This law marks an advanced step in the educational system of Indiana and will do much to conserve the health and normal physical development of the pupils in the public schools, as well as to increase the efficiency of school work

THE SANITARY SCHOOLHOUSE LAW.

AN ACT entitled an act to protect the health and lives of school children, and increase their efficiency, by providing healthful schoolhouses, and requiring the teaching of hygiene.

(S. 28. Approved March 1, 1911.)

SCHOOLS—SANITARY BUILDINGS.

Section 1. Be it enacted by the General Assembly of the State of Indiana, That after the going into effect of this act, all schoolhouses which shall be constructed or remodeled, shall be constructed in accordance and conform to the following sanitary principles, to-wit:

(a) *Sites.* All sites shall be dry, and such drainage as may be necessary to secure and maintain dry grounds and dry buildings, shall be selected and supplied. Said site and said buildings shall not be nearer than 500 feet to steam railroads, livery stables, horse, mule or cattle barn used for breeding purposes, or any unhealthful conditions. Good dry walks shall lead from the street or road to every schoolhouse and to all outhouses, and suitable playgrounds shall be provided.

(b) *Buildings.* School buildings, if of brick, shall have a stone foundation, or the foundation may be of brick, or concrete: Provided, A layer of slate, stone or other impervious material be interposed above the ground line, or the foundation may be of vitrified brick and the layer of impervious material will not be required. Every two-story schoolhouse shall have a dry, well-lighted basement under the entire building, said basement to have a cement or concrete floor and ceiling to be not less than ten feet above the floor level. The ground floor of all schoolhouses shall be raised at least three feet above the ground level and have, when possible, dry, well-lighted basement under the entire building, and shall have a solid foundation of brick, tile, stone or concrete, and the area between the ground and the floor shall be thoroughly ventilated. Each pupil shall be provided with not less than 225 cubic feet of space, and the interior walls and ceiling shall be either painted or tinted some neutral color, as gray, slate, buff or green.

(c) *Lighting and Seating.* All schoolrooms where pupils are seated for study, shall be lighted from one side only and the glass

area shall be not less than one-sixth of the floor area and the windows shall extend from not less than four feet from the floor to at least one foot from the ceiling, all windows to be provided with roller or adjustable shades of neutral color, as blue, gray, slate, buff or green. Desks and desk seats shall preferably be adjustable, and at least twenty per cent. of all desks and desk seats in each room shall be adjustable, and shall be so placed that the light shall fall over the left shoulders of the pupils. For left-handed pupils desks and seats may be placed so as to permit the light to fall over the right shoulder.

(d) *Blackboards and Cloakrooms.* Blackboards shall be preferably of slate, but of whatever material, the color shall be a dead black. Cloakrooms, well lighted, warmed and ventilated, or sanitary lockers, shall be provided for each study schoolroom.

(e) *Water Supply and Drinking Arrangements.* All schoolhouses shall be supplied with pure drinking water and the water supply shall be from driven wells or other source approved by the health authorities. Only smooth, stout glass or enameled metal drinking cups shall be used; water buckets and tin drinking cups shall be unlawful and are forbidden; and whenever it is practicable, flowing sanitary drinking fountains which do not require drinking cups, shall be provided. All schoolhouse wells and pumps shall be supplied with troughs or drains to take away waste water, and under no conditions shall pools or sodden places or small or large mudholes be allowed to exist near a well. When water is not supplied at pumps or from water faucets or sanitary drinking fountains, then covered tanks or coolers supplied with spring or self-closing faucets shall be provided.

(f) *Heating and Ventilation.* Ventilating heating stoves, furnaces, and heaters of all kinds, shall be capable of maintaining a temperature of 70 degrees Fahrenheit in zero weather and of maintaining a relative humidity of at least 40 per cent., and said heaters of all kinds shall take air from outside the building and after heating, introduce it into the schoolroom at a point not less than five nor more than seven feet from the floor, and at a minimum rate of thirty (30) cubic feet per minute for each pupil. provided, that when direct-indirect steam heating is adopted, this provision as to height of entrance of hot air shall not apply. Halls, office rooms, laboratories and manual training rooms may have direct steam radiators, but direct steam heating is forbidden for study schoolrooms, and direct-indirect steam heating is permitted. All

schoolrooms shall be provided with ventilating ducts of ample size to withdraw the air at least four times every hour, and said ducts and their openings shall be on the same side of the room with the hot air ducts.

(g) *Water-closets and Outhouses.* Water-closets or dry closets when provided, shall be efficient and sanitary in every particular and furnished with stalls for each hopper or place; and when said water or dry closets are not provided, then sanitary outhouses, well separated for the sexes, shall be provided. Good dry walks shall lead to all outhouses and screens or shields be built in front of them. Outhouses for males shall have urinals arranged with stalls and with conduits of galvanized iron, vitrified drain pipe, or other impervious material, draining into a sewer, vault or other suitable place, approved by the health authorities. Any school trustee or trustees who shall build or construct any schoolhouse or cause to be built or constructed any schoolhouse which does not include each and every sanitary provision commanded in this act, shall, upon conviction, be fined in any sum not less than one hundred nor more than five hundred dollars; and any money claim for the material entering into, or any money claim for the construction of any schoolhouse which does not in every way and all respects comply with the requirements of this act shall be null and void.

TEMPERATURE—UNCLEANLINESS—TEACHERS—PENALTIES.

Sec. 2. Whenever, from any cause, the temperature of a schoolroom falls to 60 degrees Fahrenheit or below, without the immediate prospect of the proper temperature, namely, not less than 70 degrees Fahrenheit, being attained, the teacher shall dismiss the school until the fault is corrected; and it shall also be the duty of all teachers to immediately send home any pupil who is perceptibly ill in any way, or who is unclean and emits offensive bodily odors or who is infested with lice or other vermin; and the truant officer shall arrest and prosecute parent or guardians who do not rid their children of vermin and bodily uncleanliness, when notified to do so. Refusal of parents or guardians to free their children or wards of vermin or to bathe and cleanse them, making them fit to go to school, shall be punished by a fine of not less than five dollars and imprisonment for ten days or both. And if the refusal or neglect of parents or guardians to bathe and cleanse their children or wards makes it necessary, then the truant officer, upon order of the school authorities, shall have it done, the cost to be paid by the school

authorities from the school funds. Whenever diphtheria, scarlet fever or other contagious and infectious diseases break out in any school it shall be the duty of the township trustee, school board, school trustee or the school authority or authorities having control, to have medical inspection made of the pupils, and all found in any degree ill shall be sent home and there retained until the local health officer gives a certificate of health, then such child may be again admitted to school. It shall be unlawful for school authorities to employ teachers or janitors who are not able-bodied or who are addicted to drugs or intemperate, or who have tuberculosis or syphilis. All schoolhouses shall be specially cleaned and disinfected each year before they are used for school purposes. The cleaning shall consist in first sweeping, then scrubbing the floors, washing the windows and all woodwork, including the wooden parts of seats and desks, and the disinfecting shall be done in accordance with the rules of the State board of health. Township trustees, school boards and boards of school commissioners who neglect or refuse to obey the provisions of this section shall be fined in any sum of not less than ten nor more than one hundred dollars, and each said refusal or neglect shall constitute a separate offense.

Hygiene and Sanitary Science—Printed Data.

Sec. 3. There shall be taught in each year in the fifth grade of every public school in Indiana, the primary principles of hygiene and sanitary science, and especially shall instruction be imparted concerning the principal modes by which each of the dangerous, communicable diseases are spread, and the best sanitary methods for the restriction and prevention of each such disease. Hygiene may also be taught in other grades at the will of school authorities. The State health commissioner and the State superintendent of public instruction shall jointly write, compile or originate printed data in leaflet form, setting forth as plainly as possible, the primary principles of hygiene and sanitary science, and information concerning the prevention of diseases, and supply the same to all county superintendents, and said superintendents shall supply all the schools in their respective counties and see to it that teachers do not fail to comply with this section; Provided, That for all cities and towns having school superintendents, the said leaflets and pamphlets shall be sent direct to such superintendents, who shall see to it that teachers comply with this section. The State printing

board shall publish from its funds all health leaflets or pamphlets as are herein provided for, and shall also pay the cost of distribution of the same to the county, city or town superintendents, from the State printing funds.

School Officers—Powers.

Sec. 4. For the purpose of enforcing this act and making it practical, township trustees, boards of school trustees and boards of school commissioners shall have the power, and it is herewith made lawful for said trustees and said boards to make a levy not to exceed five cents (5 cents) on each one hundred dollars ($100.00), the sum thus raised to be added to the special school fund, but to be used only for building and furnishing of schoolhouses. This levy shall not be made unless plainly necessary.

Penalty as to Officers.

Sec. 5. Any township trustee or the members of any board of school trustees or any teacher or any person who violates any provision of this act, except as herewith or otherwise provided, shall upon conviction, be fined not less than $50.00.

Repeal.

Sec. 6. All laws in conflict with this act are repealed.

INDIANA STATE BOARD OF HEALTH RULES GOVERNING QUARANTINE AND EXCLUSION FROM SCHOOLS.

RULE 1. The infectious and contagious diseases which shall be immediately reported to the health officer having jurisdiction and which shall be quarantined are hereby declared to be: Yellow fever, smallpox, cholera, diphtheria, membranous croup, scarlatina (scarlet fever), measles, typhus fever, bubonic plague, leprosy, cerebrospinal meningitis, poliomyelitis, pulmonary consumption, typhoid fever, chickenpox and whooping cough. Provided, Pulmonary consumption and typhoid fever shall not be quarantined, but are to be reported for record only. And chickenpox, whooping cough and measles shall be carded to warn the public, absolute quarantine not being required. When quarantine has been established as provided by law the quarantine card or flag shall remain in place until after the patient has been removed from such house or has recovered and is no longer capable of communicating the disease, and the house and contents thereof have been properly disinfected by order of the health officer having jurisdiction.

RULE 2. Every physician attending a person affected with any quarantinable disease shall use every precaution to prevent communicating the disease to others. To this end the board recommends that a cap and gown, linen duster, rubber coat or other sufficient cover for the clothing be worn. Before leaving the premises the hands and face should be cleansed with soap and water and a disinfecting solution. The coat, cap, antiseptic soap and bottle of disinfectant should be carried in a special receptacle which should contain a piece of cotton constantly wet with formaldehyde. Health officers and attending physicians should give full and explicit instructions to parents, nurses and attendants concerning every precaution to be taken against the spread of infectious disease.

RULE 3. Any house or building and its contents in which a case of quarantinable disease, and including tuberculosis and typhoid fever, has occurred shall be disinfected under the supervision of the health officer having jurisdiction, or his deputy, in accordance with the rules of the State board of health.

RULE 4. The minimum period of isolation, quarantine and exclusion from school in contagious diseases shall be as follows:

SMALLPOX. For the patient, quarantine for not less than twenty-one (21) days after the beginning of the disease and until all crusts and scales have fallen off or been removed, and the disinfection of patient, clothing and premises. For exposed persons, quarantine for fourteen (14) days from date of last exposure unless successfully vaccinated or protected by a previous attack of the disease, and person and clothing have been disinfected: Provided, That persons who have not been previously vaccinated and who shall submit to vaccination may be released from quarantine after disinfection of person and clothing when it has been shown that such vaccination is successful. Exclusion from school for seven (7) days following the removal of quarantine.

SCARLET FEVER. For the patient and children in the family with the patient, quarantine for not less than twenty-one (21) days after the beginning of the disease. Exclusion of the patient and children associated with the patient, from school for ten days after removal of quarantine. Other children of the family may, at the discretion of the health officer having jurisdiction, be disinfected and removed to another house and shall there be isolated and excluded from school for a period of ten days and then released, provided they remain free from the disease. For adults living in the family with or exposed to the patient:—While the house remains quarantined, unless said adults submit to thorough disinfection of the body and clothing and do not come in contact with the patient.

DIPHTHERIA. For the patient, quarantine until the secretions from the nose and throat are free from the diphtheria infection as shown by bacteriological examination of such secretions. For children associated with or in the family with the patient, quarantine until death or recovery of the patient and disinfection of person, clothing and premises: Provided, That other children of the family who shall receive an immunizing dose of antitoxin of not less than 1,000 units, may be released from quarantine at the discretion of the health officer having jurisdiction, after disinfection of person and clothing. The patient shall be excluded from school until a medical certificate that the nose and throat are free from infection, based upon bacteriological examination, is furnished. Children associated with or in the family with the patient shall be excluded from school for seven (7) days after release from quarantine unless a medical certificate of having received an immunizing dose of not less than 1,000 units of antitoxin is furnished. Adult members of the family may be released from quarantine on the condition that they be disinfected in person and apparel and remain away during the quarantine period.

EPIDEMIC CEREBRO-SPINAL MENINGITIS. For the patient, isolation from the rest of the family and quarantine for not less than fourteen (14) days after the first appearance of the disease until death or recovery of the patient and disinfection of the premises. Persons living in a house where the disease is present shall not mingle with the general public until the disease has terminated and the premises have been thoroughly disinfected. And children from said house shall be excluded from school during the quarantine period.

MEASLES. For the patient, isolation and quarantine for not less than fourteen (14) days and until peeling or desquamation has ceased. Patient shall not be permitted to attend school for five (5) days after quarantine has been removed. For other members of the family, quarantine is not required, but children in the household must not attend school or other public gatherings or mingle with other children unless satisfactory proof shall be furnished to the health officer having jurisdiction of their having had the disease, in which event the said health officer may, at his discretion, permit the said children to attend school and other public gatherings.

WHOOPING-COUGH. For the patient, isolation and quarantine for not less than five (5) weeks from the beginning of the disease and until the "whoop" has entirely ceased. For other members of the family quarantine not required, but children of the same household must not attend school or other public gatherings or mingle with other children, unless satisfactory proof shall be furnished of having had the disease, in which event the health officer having jurisdiction, at his discretion, may permit attendance at school.

CHICKENPOX. For the patient, quarantine for not less than fourteen (14) days from the beginning of the disease and until all scales and crusts have disappeared. Children living in houses where the disease exists are to be excluded from school two (2) weeks unless satisfactory proof of having had the disease is furnisned.

EPIDEMIC POLIOMYELITIS. For the patient, isolation and quarantine for not less than twenty-eight (28) days from the beginning of the disease. For other members of the family, at the discretion of the health officer having jurisdiction: Provided, That the wage earners may be allowed to attend to their work by observing the precautions recommended by the health officer. Other children in the family shall not be permitted to attend school or public gatherings or to mingle with other children for a period of fourteen (14) days after the beginning of quarantine.

RULE 5. When it is known that a person has attended school while suffering from any of the following named diseases: Measles, scarlet fever (scarlatina), diphtheria (membranous croup), small pox, epidemic cerebro-spinal meningitis, epidemic polomyelitis cholera, or bubonic plague, the local health officer shall cause the schoolroom occupied by such person to be thoroughly disinfected according to the rules of the State board of health, before being used again for school purposes.

RULE 6. When a case of contagious disease is reported it shall be the duty of the health officer having jurisdiction to ascertain the schools attended by any children from the infected premises and to serve notice upon those in charge of such schools, requiring that all persons from such infected premises be excluded from the school until a medical certificate or a written permit from the health officer is presented.

Rule 7. When a person affected with any of the quarantinable diseases has recovered and is no longer able to communicate the disease to others, or has died, the attending physician shall notify the health officer, and as soon thereafter as the health officer deems it advisable the house in which such person has been ill and the contents thereof shall be thoroughly disinfected by the health officer or his deputy.

Rule 8. The sale or use of milk or dairy or food products from the premises where one of the quarantinable diseases exists or where typhoid fever is present is strictly forbidden unless the milk, dairy or food products are handled, cans and pails washed and stock cared for by persons entirely segregated from the affected person and family, and then only upon permission of the local health officer.

Rule 9. No milk bottles shall be taken from premises on which a quarantinable disease exists until after the quarantine has been raised and said bottles have been thoroughly cleansed and disinfected by the proper health officer. Milk tickets and bread tickets shall not be taken from such premises, but shall be destroyed. No mail matter shall be taken away from such premises while the premises are under quarantine. Cats and dogs and other domestic animals belonging to premises under quarantine shall be kept out of the house and from contact with the patient. Should these precautions not be observed strictly, it shall be the duty of the health officer to cause such domestic animals to be destroyed.

Rule 10. The body of a person who has died of any of the quarantinable diseases mentioned in Rule 1 shall not remain unburied for a longer period of time than twenty-four (24) hours after death, unless embalmed and thoroughly prepared by a licensed embalmer. The undertaker or persons acting as such shall be responsible for any violations of the provisions of this rule.

Rule 11. All services held in connection with the funeral of a body of a person who has died of any of the diseases mentioned in Rule 1 shall be private. The attendance thereat shall include only the immediate adult relatives of the deceased, the necessary number of adult pallbearers, the minister and undertaker. Such services shall be held only in the home and any advertisement of such funeral shall state the cause of death.

DIRECTIONS FOR SCHOOLHOUSE DISINFECTION.

The Sanitary Schoolhouse Law of 1911, under section 2, provides that "All schoolhouses shall be especially cleaned and disinfected each year before they are opened for school purposes. The cleaning shall consist in first sweeping, then scrubbing the floors, washing the windows and all woodwork, including the wooden parts of seats and desks, and the disinfecting shall be done in accordance with the rules of the State board of health." The rules of the State board of health provide that disinfection of schoolhouses shall be done as follows:

1. Carefully close all windows and doors, except one door for exit. Paste paper over stovepipe holes, and apply wetted paper or, better, paste paper strips over all windows, transom or door cracks. In a word, seal the room tightly with paper strips from the inside.

2. Open closet doors, drawers, trunks, boxes, etc. Suspend clothing upon lines stretched across the room, or spread out on chairs or clothes horse. All books must be opened and the leaves spread. In short, the room and its contents must be so disposed as to secure free access of gas to all parts and all objects.

3. Make the air in the room damp; this is absolutely necessary for disinfecting by formaldehyde. Dampness may be produced (a) by boiling water on a gas, gasoline or oil stove; (b) by pouring boiling hot water from a teakettle into a tub; (c) by pouring hot water onto bricks or stone, or by dropping hot bricks or stones into vessels containing water. Under no circumstances is efficient disinfection possible without in some way making the air of the room quite damp.

4. Measure the room and multiply the length, breadth and height together. This will give the contents in cubic feet. Divide by 1,000, and this gives the number of thousand cubic feet in the room. This is called the unit space.

5. Measure the room, and for each 1,000 cubic feet (unit space) use two pints of formaldehyde and three and one-half ounces of commercial permanganate of potassium. Procedure: Place a large washbowl, crock, tin dishpan or galvanized iron pan or tub in the center of the room. Put in the required amount of permanganate of potassium and lastly, pour in the required amount of formalde-

hyde. Permanganate must be put in first. Retire immediately after pouring in the formaldehyde, for the formaldehyde gas is promptly released and is injurious if breathed in any quantity. Keep the room closed for at least three hours, then open, air thoroughly, and clean in the usual way.

Solidified formaldehyde may be used for gaseous room disinfection, using not less than one ounce of solidified formaldhyde for each 1,000 cubic feet, not neglecting moisture.

HEALTH SUPERVISION IN PUBLIC SCHOOLS.

The necessity for careful supervision of the health and development of school children is no longer open to argument. The people themselves are demanding such supervision as the most vital function of the public school system, so that no school can any longer claim a place in modern educational progress which ignores or neglects the health conditions of its pupils. In the light of present knowledge concerning the health of school children, it may be said that a community which neglects a systematic health care of its school pupils is guilty of criminal negligence. If all parents were sufficiently wise in health matters it would probably be unnecessary for schools to make any special study of the physical condition of the children entrusted to their care. But it is a fact, and not a theory, that not all nor even most parents are wise in matters pertaining to the health condition of their children. It becomes, therefore, the plain duty of the school department to furnish not only a healthy school environment, but also a careful guardianship of the personal health of its pupils.

Medical supervision includes far more than inspection. It means a health study in a broad sense of the pupils in the schools, with an attempt to adjust them to their physical environment. It means a study of the condition of sight, hearing, an examination for evidence of nasal obstruction, diseased tonsils, seriously defective teeth, disorders of nutrition and development, unbalanced nervous organism, for signs of early heart or lung disease, for enlarged glands, skin diseases, and symptoms of children's common contagious diseases. It means the careful physical study of school children, for it has been shown clearly that there is an intimate relation between the child's physical condition and his mental progress and future success.

Facts obtained from actual observation in many different schools of Indiana show that of all the pupils in the public schools below and including the eighth grade, 60 per cent. suffer from some physical defect that to a greater or less degree impairs their mental efficiency; that fully 25 per cent. of all grade pupils have diseased tonsils; that 18 to 20 per cent. have defective vision; that 15 per cent. have adenoids; that 8 to 10 per cent. have defective hearing.

and that fully 35 per cent. have defective teeth to such an extent as to impair nutrition, thus seriously decreasing their mental efficiency. In the face of these facts no argument is needed in favor of medical school inspection.

All who are interested in health inspection realize that it will cost. All good and desirable things do cost. We have long since recognized the need of properly inspecting our domestic animals and we gladly pay the cost for this work. The children of a State are truly its most valuable asset. We, therefore, should not only be willing but anxious to pay whatever is necessary for their care. Medical inspection of school children looks to the future as well as to the present. By relieving and removing present defects it prepares for a stronger and sturdier body of citizens in the near future. In order to bring about such a result the citizens of the present should willingly make the needed investment.

MEDICAL SCHOOL INSPECTION LAW.

AN ACT entitled an act to protect and conserve the health and lives of school children and promote their efficiency by providing for their medical inspection and subsequent necessary treatment.

(H. 27. Approved March 6, 1911.)

SCHOOLS—MEDICAL INSPECTION OF CHILDREN.

Section 1. Be it enacted by the General Assembly of the State of Indiana, That all school trustees and township trustees are herewith permitted and recommended to institute medical inspection of school children at any time; the said trustees may require teachers to annually test the sight and hearing of all school children under their charge, the said tests and uses thereof to be made according to the rules hereinafter authorized.

MEDICAL INSPECTION DEFINED.

Sec. 2. The term, medical inspection, as used in this act, shall be held to mean the testing of the sight and hearing of school children and the inspection of said children by school physicians for disease, disabilities, decayed teeth or other defects, which may reduce efficiency or tend to prevent their receiving the full benefits of school work.

SCHOOL PHYSICIAN—APPOINTMENT— COMPENSATION.

Sec. 3. Beginning with the school year 1911, school trustees and township trustees may appoint at least one school physician for each school corporation: Provided, Where practicable, two or more school corporations may unite and employ one such physician, whose duties shall be such as are prescribed in this act and the authorized rules, but no physician shall have more than 2,000 school children under his charge. Said school physicians shall be graduates of a medical college, recognized by the State board of registration and examination, shall hold a license to practice medicine in Indiana, and shall be informed and skilled in medical inspection of children, informed in the health laws and the health rules of the State board of health, shall be temperate, able-bodied, cleanly in person, not addicted to drugs, and of good moral character, and no others shall be appointed. School physicians may be discharged by the appointing power at any time. School physicians shall serve one year and until their successors are appointed, and shall

receive such compensation as the appointing trustee or trustees may determine.

PHYSICIAN'S DUTIES.

Sec. 4. School physicians shall make prompt examination and diagnosis of all children referred to them and such further examination of teachers, janitors and school buildings as in their opinion the protection of the health of the pupils and teachers may require. Whenever a school child is found to be ill or suffering from any physical defect, the school physician shall promptly send it home, with a note to parents or guardians, briefly setting forth the discovered facts, and advising that the family physician be consulted. If the parents or guardians are so poor as to be unable to give the relief that is necessary, then school trustees and township trustees, as the case may be, shall provide the necessary relief: Provided, That in cities where public dispensaries exist the relief shall be given by said dispensaries. School physicians shall keep accurate card-index records of all examinations, and said records, that they may be uniform throughout the State, shall be according to the form prescribed by the rules authorized in this act, and the method and manner of reports to be made shall be according to said rules: Provided, however, That if the parents or guardian of any school child shall at the beginning of the school year furnish the written certificate of any reputable physician that the child has been examined and parents notified of the results of such examination in such cases the services of the medical inspector herein provided shall be dispensed with, and such certificate shall be furnished by such parent or guardian from time to time, as required by the trustee or board of trustees having charge of such schools.

RULES FOR ENFORCEMENT.

Sec. 5. The State board of education and the State board of health shall jointly pass rules for the detail enforcement of the purposes of this act, which rules shall bear the printed seals of said boards; the said rules to be printed and promulgated by the State printing board; promulgation to consist in supplying a reasonable number of copies to each county superintendent, from whom all who are interested may procure a copy.

PENALTY.

Sec. 6. All violations of this act, except as otherwise provided, shall be punished by a fine of not less than ten or more than fifty dollars.

RULES FOR MEDICAL SCHOOL INSPECTION.

THE SCHOOL PHYSICIAN.

RULE 1. It shall be the duty of the school physician to examine all school children as soon as practicable after their first admission to school. This examination shall take note of said children as to cleanliness, obvious physical defects, as physical deformities, condition of nose and throat, and teeth, ear discharges, squints, general fitness for school life and previous medical history. Measurement of height and weight shall be recorded. This first examination shall be conducted in the presence of the parents or family physician, if so desired. (Provided, that any child presenting a certificate of examination as provided in the medical inspecton law, shall be exempt from the school physcian's examination.) A permanent record of all such examinations shall be kept on blanks, according to form prescribed by the State board of education and State board of health. Such records to be subject to inspection by the public only on an order from the school physician.

RULE 2. It shall be the duty of the school physician to make an examination of all children referred to him by teachers. Such examination to consist of whatever may be necessary to determine whether or not the child should be excluded from school. Such examination shall be made in the presence of the parents if so desired. In all matters pertaining to exclusion from school the decision of the school physician shall be final. A record shall be kept of all such examinations on forms shown in this manual, to be provided by the school authorities, a copy of which shall be furnished the parents or guardian of said children.

RULE 3. It shall be the duty of the school physician to make a general examination of all the children in the public schools at least once a year for any defect or disability tending to interfere with their school work, and a special examination of children (a) who show signs of being in ill health or of suffering from infectious or contagious diseases (b) who are returning to school after absence on account of illness or from unknown cause.

RULE 4. It shall be the duty of the school physician to make such examinations of teachers, janitors and school buildings as in his opinion the protection of the health of the pupils may require.

RULES FOR TEACHERS.

The teachers in all the public and parochial schools of the State of Indiana shall test the sight and hearing of all school children under their charge, once in each school year, and at such other times as may be necessary. The sight test shall be made by the use of the Snellen's Test Type Chart and the hearing test shall be by the watch test or the whisper test, preferably the whisper test. An individual record shall be kept of said test and whenever a defect of vision or hearing is noted the case *shall be referred to the school physician*. Teachers and school officials shall rigorously exclude from school all children specified in any notice of exclusion issued either by the school physician or by the local health officer until such children shall present a certificate of admission from the school physician or the health officer.

RULES FOR TESTING EYESIGHT.

RULE 1. The annual test for eyesight and hearing shall be made as early in the school year as possible, preferably in September. Individual pupils may be tested at any time that a test is considered necessary.

RULE 2. All tests shall be made as nearly as possible under the same conditions and shall be supervised by the principal or superintendent, in order to see that the conditions of the test are uniform as far as possible for the different classes.

RULE 3. Do not expose the test type chart except when in use, as familiarity with the chart leads children to learn the letters "by heart." Children should be examined singly.

RULE 4. Test each eye separately. Have the pupil begin at the top of the test card and read down as far as he can, first with one eye and then with the other. Hold a card over one eye while the other is being examined, but do not press on the covered eye, as pressure may produce an incorrect examination.

RULE 5. Place the test chart on the wall in a good light at about the level of the pupil's head and at a measured distance of 20 feet from the pupil. The chart should have a good side illumination and not hang in range of a window, which will dazzle the eyes.

RULE 6. Children wearing glasses shall be tested with the glasses properly adjusted, and if sight is found normal with the glasses it shall be recorded as normal.

Rule 7. Record as defective only those whose vision is 10-20 or less in either eye.

Rule 8. Where the child cannot name the individual letters, although able to read, the chart figures may be used. If the child does not know figures or letters, use the chart of inverted E's, asking the child to tell by the movement of the hand the side on which there is an opening on the E's, i. e., up, down, right or left.

Rule 9. The lines on the chart are numbered to indicate the distance the respective letters should be read by the normal eye. The record is made by a fraction, of which the numerator represents the distance of the chart from the child and the denominator the lowest line he can correctly read. Thus, if at 20 feet the pupil reads the line marked 20 feet, the vision is 20/20 or normal. If he only reads correctly the line above marked 30 feet, his vision is 20/30 or 2/3 normal. If at a distance of 20 feet the pupil can only read correctly the line marked 40 feet, the vision is 20/40 or 10/20, which must be recorded as defective.

If a pupil cannot read the largest letters he must go slowly toward the chart until he can. The distance he is from the chart when he can read the largest letters will be the numerator and 200 the denominator.

Rule 10. Report to the State board of health the total number of children examined and the number found defective in eyesight and hearing by test.

METHOD OF TESTING HEARING.

The person conducting the test should be possessed of normal hearing. The examination should be conducted in a room not less than 25 feet long and situated in as quiet a place as possible. The floor should be marked with parallel lines, one foot apart and numbered. The child should sit in a revolving chair in the first space. Examination should be made with the whisper or spoken voice. The child should repeat what he hears and the distance at which words can be heard distinctly should be noted. The two ears should be tested separately. The test words may consist of numbers from one to one hundred and short sentence. It is best that but one pupil at a time be allowed in the room, to avoid imitation. The standard to be adopted is as follows: In a still room the standard whisper can be heard easily at 25 feet. The whisper of a low voice can be heard from 35 to 45 feet and of a loud voice 50 to 60 feet.

In the watch test the ticking of a watch is used instead of the voice. The watch test, however, cannot be depended upon for the reason that children when asked if they hear the ticking of a watch will answer, "Yes," when in fact they do not hear the watch. For this reason the whisper test should be used.

BLANK FORMS.

The following blank forms are recommended for use in connection with the institution of school inspection, in order that the system of supervision and records may be uniform wherever medical inspection is established throughout the State. Additional blanks and forms may be added by school officials to meet local conditions, or as the scope of medical supervision may be enlarged. The forms herein given will be found essential and are to be adopted as the basis of record wherever medical inspection is instituted.

SCHOLARSHIP AND PHYSICAL RECORD.

No. 1.

DEPARTMENT OF SCHOOL HYGIENE.

CITY SCHOOLS .....

Physical Record.

HEALTH RECORD OF — SEX: M.-F. BORN:

ADDRESS

History of Rheumatism — Measles — Scarlatina

Diphtheria — Varicella — Pertussis — Pneumonia — Mumps — Grippe

SCHOOL YEAR	1		2		3		4		5		6		7		8		9	
EXAMINATION AND RESULTS	E	R	E	R	E	R	E	R	E	R	E	R	E	R	E	R	E	R
DATES																		
General Appearance																		
Nutrition																		
Flat Foot																		
Eyes																		
Ears																		
Nose																		
Throat																		
Teeth																		
Skin																		
Heart																		
Lungs																		
Neck Glands																		
Vaccination																		
Height																		
Weight																		

NOTE:
† = Normal. C. = Corrected.
— = Not normal. N. = Not corrected.
E = Examination. R = Result.
P. C. = Partially corrected.

REMARKS

For details see other side.

No. 2

DEPARTMENT OF SCHOOL HYGIENE

Scholarship Record

CITY SCHOOLS OF

Name	Date of Birth	Place of Birth	Parent	Parent's Occupation
Address	Address	Address	Date of Leaving School	Father's Nationality
1	4	7		
2	5	8	Cause of Leaving School	Mother's Nationality
3	6	9		

School Year	First Term						Second Term					
	School	Grade	Date Entered	Weeks Enrolled	Attendance	Scholarship	School	Grade	Date Entered	Weeks Enrolled	Attendance	Scholarship

For details see other side

The above form is for a complete physical and scholarship record of the pupil while enrolled in the schools. This requires a card 6x16 inches, perforated to fold lengthwise, the inside blank space of the folded card to be used for writing the details of physical examinations, with the record of treatment and results.

Both forms shown above are to be printed on one card.

No. 3.

NOTE TO SCHOOL INSPECTOR.

Name .....

Residence .....

School .....

Please examine this pupil for

Teacher

When out of Blanks notify

No. 4.

SCHOOL HEALTH DEPARTMENT. 19

TO THE PARENT OR GUARDIAN OF

.....

It is my duty to report to you the result of an examination of the above named.

.....

.....

.....

You are advised to take ... to a physician for further advice and treatment. Be sure and

TAKE THIS PAPER TO THE DOCTOR.

Medical Inspector of Schools

No. 5.

..... SCHOOL. .....19...

TO THE PARENT OR GUARDIAN.

.....*was sent home from school because*

the child's body was not clean,

the head was not clean,

the clothes were not clean.

The child must not be sent back to school until clean.

.....*Principal.*

No. 6.

DEPARTMENT OF SCHOOL INSPECTION.

.....PUBLIC SCHOOLS. .....19...

Principal:

Admit .....

.....

.....

Medical Inspector.

No. 7.

SIGHT AND HEARING TESTS.

NAME..... SCHOOL.....

DATE	Grade	EYESIGHT		Notice Sent	HEARING		Notice Sent	Remarks
		Right	Left		Right	Left		

School Health Department. .....19...

TO THE PARENT OR GUARDIAN

of .....

It is my duty to report to you that

.....

has been examined by the school inspector—or dentist—and that ..... *teeth need cleaning—treatment—filling.*

Please Secure Competent Dental Advice at Once.

.....*Teacher.*

School Health Department. .....19...

NOTICE TO PARENT OR GUARDIAN.

You are hereby notified that

.....

has been examined by the school inspector and found to have symptoms

of .....

Please Secure Competent Medical Advice at Once.

.....*Teacher.*

School Health Department. .....19...

NOTICE TO PARENT OR GUARDIAN.

You are hereby notified that the school examination of

.....

shows some trouble with the $\frac{\text{ears}}{\text{eyes}}$ *which needs competent medical advice.*

Please Attend to This at Once.

.....*Teacher.*

BLANK FORM FOR REPORT TO STATE BOARD OF HEALTH OF RESULT OF EYESIGHT AND HEARING TEST.

SCHOOL HEALTH DEPARTMENT. .....19...

EYESIGH			HEARING		
Grade	Number Examined	Number Defective	Grade	Number Examined	Number Defective
1			1		
2			2		
3			3		
4			4		
5			5		
6			6		
7			7		
8			8		

.....

Superintendent.

TEACHING OF HYGIENE.

As provided in section 3 of the Sanitary Schoolhouse Law, the State health commissioner and State superintendent of public instruction have prepared a series of pamphlets upon hygiene and sanitary science, which are to be used in connection with the works on physiology and hygiene adopted by the State board of education. These supplemental pamphlets will be sent out from time to time to county and city superintendents, to be distributed to teachers as provided in the Sanitary Schoolhouse Law.

SOME COMMENTS ON THE INDIANA SANITARY SCHOOLHOUSE LAW

The purpose of the Indiana Sanitary Schoolhouse Law, as stated in the preamble to the law, is "to protect the health and lives of school children and increase their efficiency." While the law is specific in every particular, it is manifestly impossible to enact a law that will cover every detail and provide for the many and varied local conditions that may arise. It is the purpose of this article to go into details in a brief way and, if possible, make plainer the purposes and provisions of the law.

(a) SITE. The selection of the site for a school building has an important bearing upon its hygienic condition. The land on which a schoolhouse is built should always be high and dry, with every precaution taken against dampness in the basement or about the building. There are many diseases not directly due to dampness, but which are fostered by its presence, particularly diphtheria, typhoid fever, rheumatism and consumption. A schoolhouse should never be located upon "made ground," that is, upon ground that has been filled in with ashes, rubbish, or animal or vegetable refuse. The air and moisture arising from such land will contain foul gases which are bound to make their way into the basement and building. The best soil for a schoolhouse site is gravel. Next in order of preference is a sandy soil and then sandy clay. Unmixed clay soil retains moisture very readily and basements dug in such soil are very likely to be damp. A schoolhouse should be far from confusing noises, such as those made by trains and factories. There are numerous instances of school buildings in Indiana located so near railroads that it is necessary to postpone school work whenever a train passes. The reason for a provision in the law which prohibits a school building being located nearer than 500 feet to any noise-making industry or any unhealthful condition is plainly obvious. The school building, as a general rule, should not cover more than one-half the school lot. A good rule to follow is that no adjoining structure should be nearer than twice the height of the school building. The necessity for ample playgrounds is now generally recognized. In laying out a school yard at least 30 square feet should be allowed for each pupil. Rural school yards should be one acre or

more in extent. Very frequently the choice of a school site is influenced by mercenary considerations, so that a school is located in a particular spot because the land is cheap. The importance of hygienic considerations should rise above all other factors and it should be borne in mind always that no land is too good for school purposes.

(b) Building. The Sanitary Schoolhouse Law deals with the school building only from a hygienic standpoint. The construction of a school building should receive as much attention from the sanitary authorities as from the architect, and only when the two work together may we hope to see ideal school buildings. While the demands of different communities will require much variation in plans, yet there are many general principles that apply in all cases. The first consideration is a "dry, well-lighted basement"; not a dark, foul storage room for the accumulation of old rubbish, but a clean, well-ventilated and well-lighted room that can be used in stormy weather with safety as a playground for children. Such a basement besides, can be used as a laboratory, for manual training work, for gymnastics and in various other ways as the needs of the school may require. In order that plenty of light may be admitted, the top of the foundation must be at least three feet above the ground, and four feet is even better. School buildings should not be above two stories in height, for the reason that stair climbing is not advisable and may be injurious to growing girls, and because of the greater danger in case of fire. School entrances should be large, sufficient in number, and in all cases the doors should open outward and be fitted with automatic opening devices. Under no consideration should any outside door to a school building be fastened when school is in session, because of the danger of a crush in case of fire. Stairways should be not less than 5 feet in width with steps of uniform shape, and equal width, the steps to be not more than 8 inches high. No flight of stairs should have more than 15 steps between landings.

(c) Lighting and Seating. No obstruction to the entrance of light should exist outside the school building. The best light will be had where the longer axis of the building runs east and west and the windows are on the north and south sides only. For the best and most equal distribution of light the school rooms should be long and narrow with windows on but one side. The light from the left of the pupil is best because it falls on the desk without shadows. Most pupils are right-handed and are consequently annoyed by

light from the right causing shadows upon their work. Crossed light from both right and left is injurious. Light from the front dazzles the eyes. If the light comes from the rear, the pupil's head causes shadows and the teacher faces the dazzling light. Windows should extend to within one foot of the ceiling for the reason that light from the upper part of a window is thrown farther in a room thus insuring more even distribution. Windows should extend not nearer than four feet from the floor to prevent the light from the lower part of the window shining upwards into the eyes of the pupil.

The desks and desk seats. The average child is employed at school work about one-third of the entire working period from six to fifteen years of age. This is essentially the formative period in the child's life, during which the bones are undergoing a transformation from cartilage to fully matured bone. The proper seating of the child in school during this most important period becomes an urgent problem. The old-fashioned school furniture, in which the child is compelled to fit the seat and desk, thus involuntarily assuming an injurious position has been responsible for more near-sightedness, curvatures of the spine, difficulties of respiration and distortions of the body than any other one cause. The more common defects of school seats and desks are as follows:

1. The desk too high for the child's sitting height, causing an elevation of one shoulder in attempting to write, with a corresponding lowering of the other shoulder, thus producing a tilt of the spinal column.

2. The desk too low, causing the child to stoop forward. This produces round shoulders from continued stooping and interferes with circulation and respiration.

3. Desk too far away from the seat, causing a stoop of the body with injury to the eyes and compression of the chest and abdomen.

4. Seats too high so that the feet are not supported.

5. Improper support for the back, causing fatigue and curvature of the spine.

6. Seat not suitably hollowed, causing pain and restlessness.

7. A well-proportioned desk and seat, but not adapted to the size of the child using it.

The remedy for these defects is the adjustable school desk and seat, properly modeled and properly adjusted to the pupil. Every pupil should have a desk and seat adjusted to him carefully with the adjustment changed once or even twice a year as required to allow for growth. Teachers may object to adjustable furniture.

because of the trouble necessary in proper adjustment, and because of the unsightliness of different heights of seats and desks in the same school room. These are trivial objections, and are far outweighed by the greater advantages of the child's proper growth. Two terms have come into use with adjustable school furniture, the "distance" and the "difference." In adjusting seats and desks, the "difference" only is of importance. By this term is meant the vertical distance measured from the rear edge of the pupil's desk to the plane of the seat. The proper length of this distance should be equal to the space between the pupil's elbow and the seat bones, taken in an erect sitting posture. The height of the seat from the floor should correspond to the length of the pupil's legs from the sole of the foot to the knee. Especial care should be given to crippled children who are obliged to attend school. Those suffering with hip or knee diseases where the joints are immovable should be given a seat with a desk placed 8 or 10 inches further away than ordinary, to allow a greater range of motion. If one of the lower limbs be shortened, a small footrest should be supplied for the shortened member. Cases of curvature of the spine, which are found often, can be made more comfortable by the use of a pad upon which to rest the back. All children who are afflicted in any way should be allowed more than ordinary privileges in moving about the room.

(d) Cloak Room. Wardrobes and cloak rooms should not be a part of the school room. Outer garments of children frequently carry disease germs, and damp outer garments should never be allowed to remain in the same room with school children. A model cloak room should be separated from the school room, should be connected with the corridor and should have windows so arranged as to allow a considerable supply of fresh air to circulate about the clothes. It should contain individual compartments or lockers for each pupil's garments. In some schools there are drying closets attached to the cloak rooms, for use on damp and rainy days for drying wet shoes and outer wraps of the pupils. This is a most excellent arrangement and should be installed wherever possible. It would be of great service, especially in times of epidemics to have a small air-tight closet where garments, books and other articles brought from home to school could be thoroughly disinfected.

(e) Water Supply and Drinking Arrangements. The necessity for a good, wholesome supply of drinking water in connection with all schools is obvious. This supply when not obtained from the regular city water supply should be from deep driven wells.

In this connection it may be well to know that a driven well is not safe unless made safe and kept so. Numerous instances have been noted where the well, although a deep driven well, had a gallery extending three or four feet beneath the surface, in no wise protected from surface drainage and partially filled in many cases with stagnant, slimy water. There is absolutely nothing in such case to prevent this surface drainage from following down the casing of the well and contaminating the source of water supply. All wells, whether driven or otherwise, should be thoroughly protected from any possibility of surface contamination. The common drinking cup, the filthy, saliva-coated, germ-laden, tin cup or dipper, now very properly known as "the death cup," together with the equally filthy, rusted, plague-spotted water pail, should not be tolerated for one day in a school room. Wherever possible the bubble fountain should be installed. Where fountains are impossible, an earthen or enameled water container with a spring faucet should be used, and each pupil should have a marked cup for his own use and that only. The question of each pupil using only his own cup is a matter of discipline in connection with which the responsibility of the teacher is apparent. No common towel should ever be allowed in a school. Contagious skin diseases and affections of the eye find ready interchange by use of the towel. Sanitary paper towels are both cheap and convenient. No other kind should be considered.

(f) Heating and Ventilation. (a) Heating. The temperature standard for school rooms given in the sanitary schoolhouse law as a minimum is 70 degrees. As a matter of fact 70 degrees should be the maximum. A uniform temperature of 68 degrees, with the air of a school room properly humidified, is far better than 70 degrees. Two thermometers should be placed in every school room, one at the farthest point from the stove, registers or radiators. The temperature should not vary more than three degrees in any part of the room. The methods of supplying heat are two: direct and indirect. By direct is meant when the heat supplying force is contained within the room itself as a stove or the registers of a steam or hot water plant. When a stove is used, great care should be had to see that no gases are given off and that the heat is not too intense for those nearest the stove. For the protection of pupils who must sit near the stove and in order to prevent them from becoming "over done," fire screens should be used. These screens should always be constructed of two layers

of metal with a layer of asbestos or space for air between. Indirect heating consists in warming fresh air outside the room then introducing this warmed air into the room. Three methods of indirect heating are in general use: steam, hot water and warm air furnaces. One or the other of these indirect systems should always be used when possible. The important point favoring the warm air system is the simplicity of its operation. After all, the most important part of any indirect system of heating is the janitor or engineer in charge. The average school janitor is selected because of his inability to perform any other work and because he can thus be employed at a saving of dollars and cents, too often without regard for the health and lives of the school pupils. A janitor should always be selected with as much care as a teacher, should be fully equipped for his work and invariably sober and industrious

(b) Ventilation. In spite of the fact that the dangers of illy-ventilated rooms have been widely discussed by sanitarians and educators and the State Board of Health has passed rules and issued orders protesting against lack of fresh air in school rooms, it is nevertheless true that in hundreds of school rooms in Indiana the air is not so pure as in the ordinary stable. Most of these rooms are in buildings constructed years ago when no other means was provided for changing the air than is afforded by doors and windows. The sanitary schoolhouse law seeks to provide better ventilation in the school rooms of the future by establishing a fixed compulsory standard of fresh air supply. The problem of supplying fresh air would seem simple enough, for there is an abundance of fresh air in the world. The difficulty comes in bringing about a constant exchange of outside fresh air for inside foul air without causing draft. Two methods of artificial ventilation are permissible, the gravity system by which the currents of air are kept in motion by the difference of weights of hot and cold air; and the fan system by which the air is circulated in the rooms by means of a forced draft from a rotary fan There can be no question as to the relative merits of these two systems, especially in buildings with more than six rooms. The fundamental principle of schoolroom ventilation has been expressed as follows: "If a given amount of air is required in a given space, in a given time, it must be put there, not allowed to go there." Because the rotary fan will "put" a given amount of air whenever and wherever it is required, the fan system of ventilation should always be installed

in any school building containing more than six rooms. In smaller buildings, those containing six rooms or less, a system of gravity ventilation with openings of sufficient size to admit fresh air and with ample ducts to carry off the foul air will be found satisfactory. All openings for the intake or exit of air should lead directly to the outside of the building, never opening into the basement or attic, as can now be found in hundreds of school buildings throughout the State.

(g) Water Closets and Outhouses. The proper placing of water closets is often a difficult matter and one about which there is much difference of opinion. Whenever possible, closets should be placed in the building. When closets are located outside the building, many children will refuse to respond to the call of nature, on account of exposure to cold, and in consequence of delay will suffer from constipation, hemorrhoids, etc. The best closet for all grades is one that is flushed every time it is used, either by means of a chain and pull or by a mechanical device that operates when the weight of the body is taken from the seat. The principal source of trouble is to be found in securing a satisfactory urinal for boys. This should always be constructed of impervious material, such as slate, cement or porcelain, should be trough-like in shape with a continuous and strong flow of water through it. The floor should be of a similar impervious material for at least six feet from the urinal with a perceptible slope forward toward a drain, in order to be easily and thoroughly flushed. Where sewerage is impossible a dry closet system if properly installed will be found satisfactory, especially if burned out every day. In country schools the dry earth closet, if properly attended, serves every purpose admirably. Here again, the question of proper care of closets of whatever kind is largely a matter of discipline for which the teacher is responsible. Children should be taught that nuisances in closets whether from a moral or sanitary point of view will not be tolerated.

Disinfection. The various so-called "automatic" disinfecting appliances so frequently found in school rooms and so highly recommended as a sure preventative of all contagious diseases (by the agent) are a delusion and a snare. Mostly (when they do anything) they give off a disagreeable odor, which like the ancient asafœtida sack, creates a false sense of security. All such appliances are absolutely without value. Many janitors and school trustees place too much reliance on disinfectants, seeming to think that

no matter how filthy a corner may be, a liberal sprinkling of lime or wood ashes will immediately purify it. The best disinfectant always and everywhere is cleanliness.

Scrupulous cleanliness should be the "first relief" in every case, to be applied in advance of other means.

The Janitor and His Duties. The janitor is by far the most important official connected with the school. As has been indicated above, the efficiency of any artificial system of heating and ventilation depends fully as much on the knowledge and care of the janitor in charge of the system as upon the mechanical correctness of the system itself. It seems more than strange that school authorities will often place the welfare of the children of a community in the hands of a man so ignorant and incompetent that the same school authorities would not trust a team of horses in his care at any price. In the first place, janitors should be well paid, for their work is important. In the second place the qualifications of a janitor should be scrutinized as carefully as the qualifications of a teacher. In the third place, the instructions issued to janitors should be specific, covering every part of their work, and the work should be systematized and thoroughly understood by the school officials and janitors. The janitor should not live in the school building. The necessary accompaniments of housekeeping, such as cooking, laundry work, domestic pets, etc., have no place in the average school building and are a source of annoyance and positive injury. Dry sweeping and feather dusters should be prohibited. No sweeping should be permitted, either in corridors or rooms when school is in session. Janitors should be thoroughly instructed in all the requirements of heating and ventilation and should thoroughly understand every mechanical appliance connected with the system under their care. An anemometer (an instrument for measuring the volume of air entering or leaving a room) should be a part of the equipment of every school corporation, where artificial ventilation is in use. Janitors should not be permitted to leave brooms, stepladders, or tools of any kind, standing in corridors, stairways or behind doors. Besides forming convenient places for the accumulation of dust and dirt, such things in hallways and exits might easily become a serious obstacle in the way of escape in case of fire.

Pencils. The argument against the common drinking cup and the common towel, applies with equal force to the common use of pencils. Frequently pencils are given out to pupils in the morning and taken up in the evening. No system of marking these pencils

can prevent mouth contamination and possible interchange of pencils. When a pencil is given to a pupil, the pencil should be the individual property of that pupil, to be kept in his desk and not taken up and given out again by the teacher. The slight increased expense incurred in replacing pencils carried away and lost is trivial, when compared with the danger of transmitting disease from one pupil to another in the indiscriminate interchange of "chewed" pencils

Care of Floors. The use of oil on school room floors will overcome the "dust nuisance" to a very great extent. Experiments show that proper application of oil decreases the bacteria count in the air and dust of school rooms from 55 to 250 per cent. All school room floors should be oiled from two to four times a year as required.

Humidity of Air. The air of school rooms should always be "humidified," that is, moisture should be added. Where heating and ventilating systems are installed, an air washing device should be included in the system. When "direct-indirect" heating is used, shallow pans to hold water for evaporation placed on the radiators, answer a good purpose. Where stoves are used, a kettle containing water should be kept on the stove.

No law can create efficiency, but may point the way to efficiency. An intelligent interpretation of the sanitary schoolhouse law, with an intelligent application of the principles of school hygiene contained therein will do much to make the schools of Indiana what they should be, namely: the crystallized intelligence and sentiment of the State toward its future citizens.

LIBRARY OF CONGRESS
0 020 313 790 4